

WHAT IS CLAIMED IS:

1. A network endpoint system, comprising:
at least one system processor performing endpoint functionality processing;
a system interface connection configured to be coupled to a network;
5 at least one network processor, the network processor coupled to the system interface
connection to receive data from the network; and
an interconnection between the system processor and the network processor so that the
network processor may analyze data provided from the network and process the
data at least in part and then forward the data to the interconnection so that other
10 processing may be performed on the data within the system.

2. The network endpoint system of claim 1, wherein the system processor comprises a
storage processor.

3. The network endpoint system of claim 1, wherein the system processor comprises an
application processor.

4. The network endpoint system of claim 1, wherein the system comprises a plurality of
system processors configured as an asymmetric multi-processor system.

5. The network endpoint system of claim 1, wherein the system comprises a plurality of
processors communicating in a peer to peer environment.

6. The network endpoint system of claim 5, wherein the plurality of processors comprises
25 the network processor and the system processor.

7. The network endpoint system of claim 6, wherein the plurality of processors comprises
the network processor and multiple system processors.

8. The network endpoint system of claim 7, wherein the multiple system processors
30 comprises a storage processor and an application processor.

9. The network endpoint system of claim 8, wherein the interconnection comprises a distributed interconnection.

5 10. The network endpoint system of claim 9, wherein the distributed interconnection comprises a switch fabric.

11. The network endpoint system of claim 5, wherein the interconnection comprises a distributed interconnection.

10 12. The network endpoint system of claim 11, wherein the distributed interconnection comprises a switch fabric.

13. The network endpoint system of claim 1, wherein the interconnection comprises a switch fabric.

14. The network endpoint system of claim 1, wherein the network processor filters data incoming to the network endpoint system from the network.

15 20 15. The network endpoint system of claim 1, the network processor enabling accelerated system performance.

16. The network endpoint system of claim 1, the network endpoint system being a content delivery system.

25 17. The network endpoint system of claim 16, the network endpoint system providing accelerated content delivery.

18. A method of operating a network endpoint system, the method comprising:

providing a network processor within the network endpoint system, the network processor being configured to be coupled to an interface which couples the network endpoint system to a network;

processing data passing through the interface with the network processor; and

forwarding data from the network processor to a system processor which then performs at least some endpoint functionality upon the data.

19. The method of claim 18, wherein the network processor analyzes headers of data packets transmitted to the network endpoint system from the network.

20. The method of claim 19, the method further comprising configuring the network processor and the system processor in a peer to peer computing environment.

21. The method of claim 19, wherein the network endpoint system comprises a plurality of system processors, the method further comprising configuring the network processor and the plurality of system processors in a peer to peer computing environment.

22. The method of claim 21, the network processor and the plurality of system processors configured as an asymmetric multi-processor manner.

23. The method of claim 22, the method further comprising operating the network endpoint system in a staged pipeline processing manner.

24. The method of claim 23, the plurality of system processors comprising a storage processor and an application processor.

25. The method of claim 23, wherein the endpoint functionality is content delivery.

26. The method of claim 25, further comprising accelerating the content delivery of the network endpoint system.

27. The method of claim 18, the method further comprising configuring the network processor and the system processor in a peer to peer computing environment.

28. The method of claim 18, wherein the network endpoint system comprises a plurality of system processors, the method further comprising configuring the network processor and the plurality of system processors in a peer to peer computing environment.

29. The method of claim 18, the network endpoint system configured as an asymmetric multi-processor system.

30. The method of claim 18, the network processor performing filter functions upon the data passing through the interface.

31. The method of claim 18, the data forwarded by the network processor being forwarded through a switch fabric.

32. The method of claim 23, wherein the endpoint functionality is content delivery, the method further comprising accelerating the content delivery of the network endpoint system.

33. A network endpoint system, comprising:
a first processor engine, the first processor engine configured to receive data from a network;
a second processor engine, the second processor engine performing at least some endpoint functionality, the first processor engine performing tasks different from the endpoint functionality tasks performed by the second processor engine; and
an interconnect coupling the first and second processor engines;
wherein the network endpoint system is configured in at least one manner to provide accelerated performance.

34. The network endpoint system of claim 33, the first processor engine performing processing upon at least a portion of the data packets of the received data so as to off-load processing from the second processor engine.
- 5 35. The network endpoint system of claim 33, wherein the first and second processor engines are configured in a peer to peer environment.
36. The network endpoint system of claim 35, wherein the interconnect is a switch fabric.
- 10 37. The network endpoint system of claim 33, wherein the interconnect is a switch fabric.
38. The network endpoint system of claim 33, further comprising a third processor engine, the third processor engine performing tasks different from the tasks performed by the first and second processor engines.
- 15 39. The network endpoint system of claim 38, wherein at least two of the first, second or third processor engines each comprises a plurality of processor modules.
- 20 40. The network endpoint system of claim 39, wherein one or more processor modules of one processor engine may be reassigned to perform the tasks of another processor engine.
41. The network endpoint system of claim 38, further comprising a system management processor engine.
- 25 42. The network endpoint system of claim 33, further comprising a system management processor engine.
- 30 43. The network endpoint system of claim 42, wherein the first processor engine is a network interface processor engine and the second processor engine is a storage processor engine or an application processor engine.

44. The network endpoint system of claim 33, wherein the first processor engine is a network interface processor engine and the second processor engine is a storage processor engine or an application processor engine.

5 45. The network endpoint system of claim 44, wherein the second processor engine is an application processor engine, the network endpoint system further comprising a storage processor engine.

10 46. The network endpoint system of claim 45, wherein the network interface processor engine, the storage processor engine processor and the application processor engine are configured in a peer to peer environment.

15 47. The network endpoint system of claim 46, wherein the interconnect is a distributed interconnect.

48. The network endpoint system of claim 47, wherein the distributed interconnect is a switch fabric.

20 49. The network endpoint system of claim 47, wherein the network endpoint system comprises a network processor.

50. The network endpoint system of claim 49, wherein the storage processor engine processor and the application processor engine each comprise a plurality of processor modules.

25 51. The network endpoint system of claim 50, further comprising a system management processor engine.

52. The network endpoint system of claim 51, wherein the system is contained within a single chassis.

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53. A method of providing a network endpoint termination through the use of a network endpoint system, comprising:

providing a plurality of separate processor engines, the processor engines being assigned separate tasks in an asymmetrical multi-processor configuration;

providing an interface connection to at least one of the processor engines to couple the network endpoint system to a network; and

generating an accelerated data flow through the network endpoint system.

54. The method of claim 53, wherein the separate processor engines communicate as peers in a peer to peer environment.

55. The method of claim 54, wherein the separate processors communicate across a distributed interconnect.

56. The method of claim 55, wherein the distributed interconnect is a switch fabric.

57. The method of claim 55, wherein the processor engine coupling the network endpoint system to a network comprises a network processor.

58. The method of claim 57, further comprising performing look ahead processing within the network processor to off-load processing tasks from the other processor engines.

59. The method of claim 53, wherein the network endpoint system is a content delivery system.

60. The method of claim 59, wherein the processor engine coupling the network endpoint system to a network comprises a network processor.

61. The method of claim 60, further comprising performing look ahead processing within the network processor to off-load processing tasks from the other processor engines.

62. The method of claim 61, wherein the separate processor engines communicate as peers in a peer to peer environment.

63. The method of claim 61, wherein the separate processors engines communicate across a distributed interconnect.

64. The method of claim 63, wherein the distributed interconnect is a switch fabric.

65. The method of 61, wherein the network processor is contained with a network interface engine, the other processing engines comprising a storage processor engine and an application processor engine.

66. The method of claim 65, wherein the network interface engine, the storage processor engine and the application processor engine communicate as peers in a peer to peer environment.

67. The method of claim 66, further comprising performing at least some system management functions in a system management processor engine.

68. The method of claim 67, further comprising tracking system performance within the system management processor engine.

69. The method of claim 67, further comprising implementing system policies with the system management processor engine.

70. The method of claim 53, the network endpoint system being a content delivery

71. A method of providing a content delivery system through the use of a network connectable computing system, comprising:

providing a plurality of separate processor engines, the processor engines being assigned separate tasks in an asymmetrical multi-processor configuration;

providing a storage processor engine, the storage processor engine being one of the plurality of separate processor engines;

providing a network interface connection to at least one of the processor engines to couple the content delivery system to a network;

5 providing a storage interface connection to the storage processor engine to couple the storage processor engine to a content storage system; and
accelerating content delivery through the network endpoint system.

72. The method of claim 71, wherein the separate processor engines and the storage
10 processor engine communicate as peers in a peer to peer environment.

73. The method of claim 72, wherein the separate processors and the storage processor
engine communicate across a distributed interconnect.

74. The method of claim 73, wherein the distributed interconnect is a switch fabric.

75. The method of claim 73, wherein the processor engine coupling the network endpoint
system to a network comprises a network processor.

76. The method of claim 75, further comprising performing look ahead processing within the
network processor to off-load processing tasks from the other processor engines.

77. The method of claim 71, wherein the separate processor engine coupling the network
endpoint system to a network interface processor engine comprises a network processor.

78. The method of claim 77, further comprising performing look ahead processing within the
network processor to off-load processing tasks from the other processor engines.

79. The method of claim 78, wherein the separate processor engines and the storage
30 processor engine communicate as peers in a peer to peer environment.

80. The method of claim 79, wherein the separate processor engines and the storage processor engine communicate across a distributed interconnect.

81. The method of claim 80, wherein the distributed interconnect is a switch fabric.

82. The method of claim 79, wherein one of the separate processor engines is an application processor engine.

83. The method of claim 82, wherein the network interface engine, the storage processor engine and the application processor engine communicate as peers in a peer to peer environment.

84. The method of claim 83, further comprising performing at least some system management functions in a system management processor engine.

85. The method of claim 84, further comprising tracking system performance within the system management processor engine.

86. The method of claim 85, further comprising implementing system policies with the system management processor engine.

87. A network connectable computing system, comprising:
a first processor engine;
a second processor engine, the second processor engine being assigned types of tasks different from the types of tasks assigned to the first processor engine;
a third processor engine, the third processor engine being assigned types of tasks that are different from the types of tasks assigned to the first and second processor engines; and
a distributed interconnection coupled to the first, second and third processor engines, the tasks of the first, second and third processor engines being assigned such that the system operates in staged pipeline manner through the distributed interconnection.

88. The system of claim 87, wherein the system is a network endpoint system.

89. The system of claim 87, wherein the first processor engine is a network interface engine comprising a network processor.

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90. The system of claim 89, wherein the second processor engine is an application processor engine and the third processor engine is a storage processor engine.

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91. The system of claim 90, wherein at least one of the first, second or third processor engines comprises multiple processor modules operating in parallel.

92. The system of claim 91, wherein the application processor engine comprises multiple processor modules operating in parallel and the storage processor engine comprises multiple processor modules operating in parallel.

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93. The system of claim 92, wherein the network interface processor engine, the application processor engine, and the storage processor engine communicate in a peer to peer fashion.

94. The system of claim 93, wherein the distributed interconnect is a switch fabric.

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95. The system of claim 87, wherein the distributed interconnect is a switch fabric.

96. The system of claim 95, wherein the second processor engine is an application processor engine and the third processor engine is a storage processor engine.

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97. The system of claim 96, wherein at least one of the first, second or third processor engines comprises multiple processor modules operating in parallel.

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98. The system of claim 97, wherein the application processor engine comprises multiple processor modules operating in parallel and the storage processor engine comprises multiple processor modules operating in parallel.

99. The system of claim 97, wherein the first processor engine is a network interface processor engine comprising a network processor.

5 100. The system of claim 99, wherein the network interface processor engine, the application processor engine, and the storage processor engine communicate in a peer to peer fashion.

101. A network connectable content delivery system, comprising:

a first processor engine;

10 a second processor engine, the second processor engine being assigned types of tasks different from the types of tasks assigned to the first processor engine;

15 a storage processor engine, the storage processor engine being assigned types of tasks that are different from the types of tasks assigned to the first and second processor engines, the storage processor engine being configured to be coupled to a content storage system; and

20 a distributed interconnection coupled to the first, second and third processor engines, the tasks of the first, second and third processor engines being assigned such that the system operates in staged pipeline manner through the distributed interconnection.

20 102. The system of claim 101, wherein the system is a network endpoint system.

103. The system of claim 101, wherein the first processor engine is a network interface engine comprising a network processor.

25 104. The system of claim 103, wherein the second processor engine is an application processor engine.

105. The system of claim 104, wherein at least one of the first, second or storage processor engines comprises multiple processor modules operating in parallel.

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106. The system of claim 105, wherein the application processor engine comprises multiple processor modules operating in parallel and the storage processor engine comprises multiple processor modules operating in parallel.

5 107. The system of claim 106, wherein the network interface processor engine, the application processor engine, and the storage processor engine communicate in a peer to peer fashion.

108. The system of claim 107, wherein the distributed interconnect is a switch fabric.

10 109. The system of claim 101, wherein the distributed interconnect is a switch fabric.

110. The system of claim 109, wherein the second processor engine is an application processor engine and the third processor engine is a storage processor engine.

15 111. The system of claim 110, wherein at least one of the first, second or storage processor engines comprises multiple processor modules operating in parallel.

20 112. The system of claim 111, wherein the application processor engine comprises multiple processor modules operating in parallel and the storage processor engine comprises multiple processor modules operating in parallel.

113. The system of claim 111, wherein the first processor engine is a network interface processor engine comprising a network processor.

25 114. The system of claim 113, wherein the network interface processor engine, the application processor engine, and the storage processor engine communicate in a peer to peer fashion.

115. A network connectable content delivery system, comprising:

a first processor engine;

30 a second processor engine, the second processor engine being assigned types of tasks different from the types of tasks assigned to the first processor engine;

a storage processor engine, the storage processor engine being assigned types of tasks that are different from the types of tasks assigned to the first and second processor engines, the storage processor engine being configured to be coupled to a content storage system; and

5 a distributed interconnection coupled to the first, second and third processor engines, the tasks of the first, second and third processor engines being assigned such that the system operates in staged pipeline manner through the distributed interconnection, wherein at least one of the first or second processor engines performs system management functions so as to off-load management functions from the other
10 processor engines.

116. The system of claim 115, wherein the first processor engine is a storage management processor engine that performs at least some of the off-loaded management functions.

15 117. The system of claim 115, wherein the first processor engine is a network interface processor engine that performs at least some of the off-loaded management functions.

118. The system of claim 117, wherein the network interface processor engine comprises a network processor.

20 119. The system of claim 115, wherein at least some system management functions are off-loaded from the storage processor engine.

25 120. The system of claim 119, wherein the second processor engine is an application processor engine, wherein at least some system management functions are off-loaded from both the storage processor engine and the application processor engine.

121. The system of claim 120, wherein the system management functions comprise prioritizing data flow through the system.

122. The system of claim 120, wherein the system management functions comprise quality of service functions.

123. The system of claim 120, wherein the system management functions comprise service level agreement functions.

124. The system of claim 120, wherein the system management functions comprise filtering content requests.

125. The system of claim 124, wherein the first processor engine is a system management processor engine that performs the filtering functions.

126. The system of claim 124, wherein the first processor engine is a network interface processor engine that performs the filtering functions, the network interface processor engine comprising a network processor.

127. The system of claim 115, wherein the system management functions comprise prioritizing data flow through the system.

128. The system of claim 115, wherein the system management functions comprise quality of service functions.

129. The system of claim 115, wherein the system management functions comprise service level agreement functions.

130. The system of claim 115, wherein the system management functions comprise filtering content requests.

131. The system of claim 130, wherein the first processor engine is a system management processor engine that performs the filtering functions.

132. The system of claim 130, wherein the first processor engine is a network interface processor engine that performs the filtering functions, the network interface processor engine comprising a network processor.